CLAIMS

1. A Sub-Sequence Net (Sub SN), which comprises:

   a sequence net including N+1 programs and distributed data tokens; and

   N+1 return instructions.

2. The Sub SN of Claim 1, wherein a call instruction of said Sub SN is a single machine instruction.

3. The Sub SN of Claim 2, wherein said call instruction calls said Sub SN by activating a calling Sub SN device.

4. The Sub SN of Claim 3, wherein said calling Sub SN device comprises a calling bus device for establishing a connection between said call position of single machine and said Sub SN.

5. The Sub SN of Claim 4, wherein said calling Sub SN device is initiated by a single machine sequence net call instruction whose call parameters is transmitted to N+1 units by broadcasting, the call parameters are used as a call entry address of N+1 branch programs of said Sub SN, the N+1 branch programs are on site protection and exit by return instructions.

6. The Sub SN of Claim 4, wherein said calling Sub SN device comprises an activating device for calling instructions from a sequence net call instruction of a single machine to N+1 parallel programs.

7. The Sub SN of Claim 4, wherein said means for calling Sub SN comprises a contention device for processing a number of requests simultaneously.

8. The Sub SN of Claim 4, wherein said means for calling Sub SN comprises an interrupt initiation device for transmitting call parameters from serial program to parallel programs, and a paralleled interrupt initiation device.

9. A Sub-Sequence Net (Sub SN) calling system, which comprises:

   a plurality of computers;

   a plurality of sequence net call devices for handling call contentions, saving sequence net call parameters, and identifying sequence net call instructions; and

   a group of buses for connecting the sequence net call devices together, the group of buses comprising:

a call initiating bus for receiving a initiating level sent by one call device of said sequence net;

a group of data buses; and

a shared clock bus.

10. The Sub SN call system of Claim 9, wherein each sequence net call device comprises:

a call request device for receiving sequence net call instructions, generating a initiating level in next clock pulse, and delivering the initiating level to said initiating bus;

a call contention device for arbitrating a call of the highest priority as valid;

call parameters and interrupt devices, for determining a source of sequence net call parameters based on outputs of said call contention devices, and sending a interrupt level via said bus.

11. The Sub SN call system of Claim 10, wherein each said sequence net call device further comprises a weight register of this machine, and comparison devicefor saving comparing the weight of this machine with the highest weight of requests in order to determine if this machine is the source of sequence net call parameters.

12. The Sub SN call system of Claim 11, wherein the said register and comparison devices further comprising a system grade register and a request grade register, when said sequence net call device receives an request of grade call, if the output of said request grade register is greater than the output of said system grade register so that said call request device generates a initiation level to said initiation bus whereas the output of said request grade register is smaller than the output of said system grade register, the said register and comparison devices do not generate said permission signal and thus no initiation level is generated.

13. The Sub SN call system of Claim 10, wherein the said register and comparison devices further comprises a sequence call register (named next register) indicating the next right of sequence call, when said sequence net call device receives a sequence call request, the output of said next register is compared with said right of this machine (usually number of this machine), if the comparison result indicates that the output of said next register and said right of this machine is same, a initiation level is generated, otherwise, a initiation level is not generated.

14. A method for calling Sub-Sequence Net (Sub SN) which comprises: sequence net including N+1 programs and a distributed data token structure; and N+1 return instructions, wherein said Sub SN includes a plurality of computers and a plurality of sequence net call devices; the call instruction calls said Sub SN by activating at least one sequence net call device of said sequence net call devices, wherein the method comprises the following steps:

a)   said sequence net call devices instructions for calling the sequence net from the plurality of computers;

b)   sequence net call device of said received sequence net call instruction sends a initiation level via a initiation bus to all sequence net call devices;

c)   when sequence net call device of said receiving sequence net call instruction detects said initiation level existed in said initiation bus, the sequence net call device of said receiving sequence net call instruction sends the weight of this machine to said data bus; then the weight of entire system on the said data bus is written in a temporary register by said sequence net call device; and

d)   the sequence net call device of said receiving sequence net call instruction compares the highest valid bit (=1) of register (hereinafter as HVBOR) of the temporary register with the weight of this machine, the call of said sequence net call device is valid for valid comparison and invalid for an invalid comparison; at least one call made by sequence net call device of receiving sequence net call instruction will be valid.

15. The call method of Claim 14, wherein the step b) comprises the steps of "or" operation of the weights of machines sending by sequence net call device of said received sequence net call instruction, to produce the weight of entire system.

16. The call method of Claim 14, further comprising the following step between step a) and step b): a grade call instruction for supporting grades of system is generated by at least one computer.

17. The call method of Claim 16, further comprising the step of said computer writing a request grade into the request grade register of said sequence net call device prior to said computer sending said grade call instruction.

18. The call method of Claim 17, further comprising the steps of comparing the said request grade with the HVBOR of system grade, wherein if the request grade is lower than or equal to said current system grade then said grade call request is not accepted, and if the request grade is higher than said current system grade then said grade call request is accepted, and the initiation level is generated at the step b) by the sequence net call device.

19. The call method of Claim 18, further comprising the following steps between the step b) and the step c):

  b1)   on said initiation bus, "or" operation on said initiation level of sequence net call device of sequence net grade call instruction received is operated and the result of "or" operation is delivered to all the said sequence net call devices;

  b2)   when sequence net call device of said received sequence net call instruction detects that a initiation level exists in said initiation bus, the said sequence net call device control of received sequence net grade call instruction send a request grade of this machine to said data bus, then entire system request grade of said data bus is written into temporary register via said all sequence net call devices;

  b3)   the HVBOR of temporary register is compared with request grade by sequence net call device of said received sequence net grade call instruction, and the equality of comparison denotes a valid grade call of the sequence net call device; and

  b4)   the HVBOR of said temporary register is written into the system grade register of said all sequence net call device so that a new HVBOR of the system is recorded.

20. The call method of Claim 14, further comprising the following step between step a) and step b): at lease one computer of the plurality of computers sends a sequence call request for supporting ordered events and complicated program structures.

21. The call method of Claim 20, further comprising the step of designating next sequence call by writing the next register of all sequence net call devices.

22. The call method of Claim 21, further comprising the following steps between the step b) and the step c):

  b')   said multiple sequence net call devices receive a request of sequence call instructions from said computer; and

  b")   comparing the next register (usually the next number of machine) with the right (usually the number) of this machine, the said sequence call request is allowed for an affirmative comparison, otherwise the sequence call request of sequence net call device should be invalid and no initiation level will be sent to said initiation bus.

23. The call method of Claim 22, further comprising the following steps between the step c) and the step d):

      c')   sequence call feature data is sent to data bus by sequence net call device which has received sequence net call instruction;

      c")   data on data bus is written to a temporary register by sequence net call device of said received sequence net sequence call instruction, and the sequence call feature is examined for checking the existence of grade call, i.e. the validity of said sequence call.